

Water Sustainability for Silicon Valley: An Environmental Perspective

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CA Water System: Major Rivers



CA Water System: Projects



Silicon Valley's Water Supply

- **Silicon Valley:**
 - **Includes parts of Santa Clara, San Mateo and Alameda Counties**
- **Regional Water Purveyors:**
 - **Santa Clara Valley Water District**
 - **San Francisco Public Utilities Commission**
 - **Bay Area Water Supply and Conservation Agency**



SCVWD

- **50% local supplies (reservoirs/gw), 50% imported**
- **Imported Supplies:**
 - CVP supplies (152 TAF/yr or 135 mg/day)**
 - SWP supplies (100 TAF/yr or 89 mg/day)**
 - Hetch Hetchy (76 TAF/yr or 23 mg/day)**
- **Provides water to nearly 1.8 million people in 15 cities, covering over 1,300 sq. miles.**
- **Projected growth for SC County: 1.9 million by 2020.**
- **Water use by sector: 91% M & I, 9% Agriculture**

BAWSCA

- **Supply: 66% Hetch Hetchy, 16% GW, 18% Recycling and other sources**
- **Comprised of 28 cities, water districts and agencies in parts of San Mateo, Alameda, and Santa Clara Counties**
- **Provides water to 1.7 million people**
- **Water use by sector: 62% Residential, 38% Commercial/Industrial**
- **Hetch Hetchy water: Also delivered to SF, MID and TID**

Major Sustainability Issues Facing the Valley

- **Limited amount of quality freshwater available + population growth in the area = risk of shortages**
- **Supplies in multiple dry years will not meet demand projections**
- **All imported sources pose environmental problems**
- **Existing infrastructure needs maintenance**

Other Issues

- **Toxic chemicals in groundwater**
- **San Luis Low-Point Project**
 - **Henry Coe State Park**



Issues Outside the Valley

Unresolved Issues:

- **Lack of adequate flows to restore the Trinity River**
- **Lack of adequate flows to restore the San Joaquin River**
- **Flooded Hetch Hetchy Valley**
- **Degradation of the San Francisco-San Joaquin Delta**

Trinity River

- Important fishery, supports livelihood of Native American tribes.
- Diversions for Northern CA power and Central Valley irrigation have significantly decreased flows and impacted fisheries.
- Current litigation is delaying long-overdue restoration (supported by 20 yrs of studies).
- Is it sustainable to continue diverting water at the expense of the environment and Native Americans?



San Joaquin River

- **Tributary of the Delta, one-time important fishery.**
- **Ag diversions have significantly reduced flows for the river, drying up reaches of the river and impacting fisheries.**
- **Negotiations between water users and environmental interests have broken down, stalling restoration.**
- **Is it sustainable to continue diverting huge volumes of water at the expense of the environment?**

Hetch Hetchy Valley

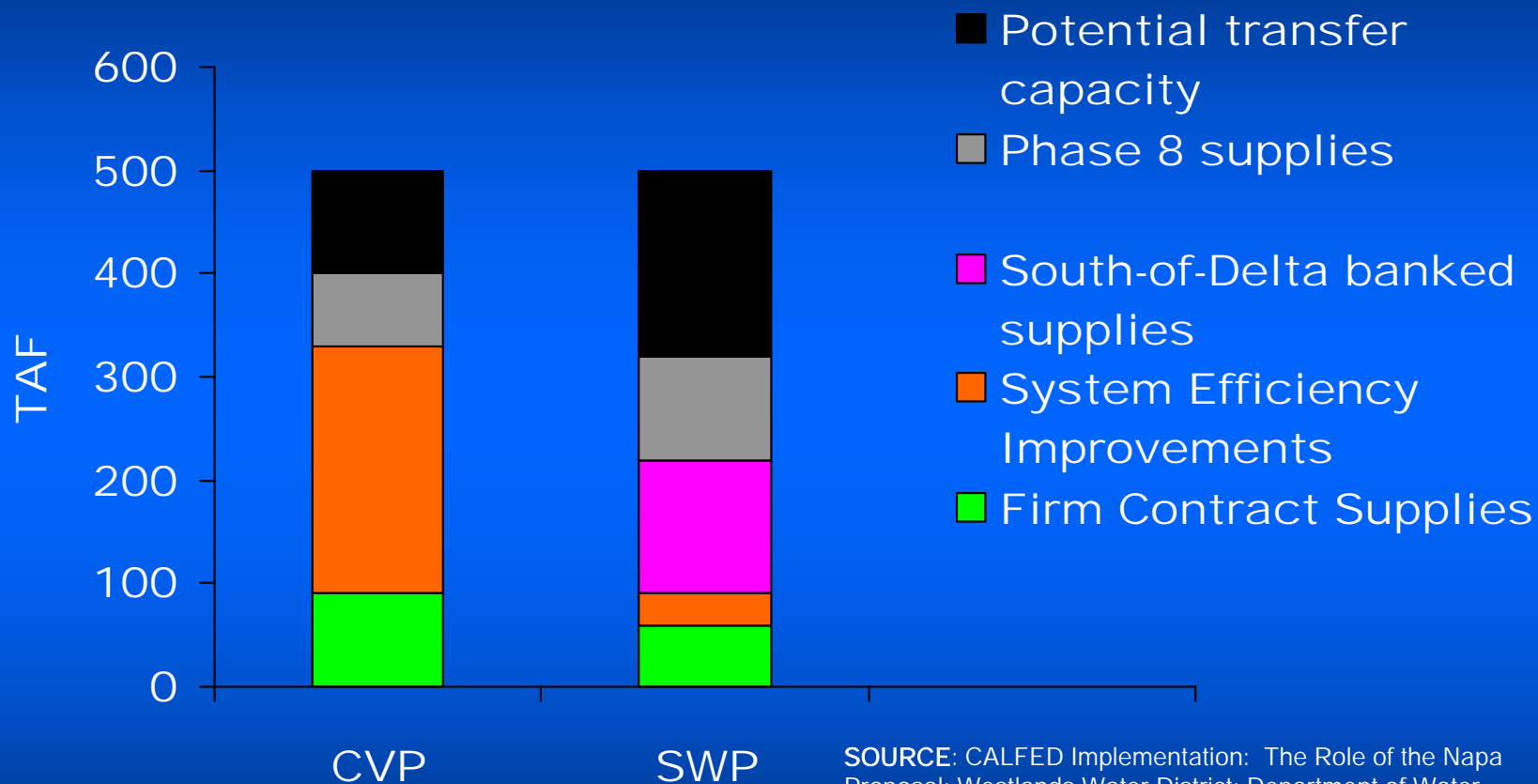
- **Currently submerged to provide water and power for San Francisco and Silicon Valley.**
- **Environmental Defense will release report assessing feasibility of Valley restoration in summer 2004.**
- **Is it sustainable to continue to store water in a National Park when other less damaging and feasible alternatives exist?**



San Francisco-San Joaquin Delta

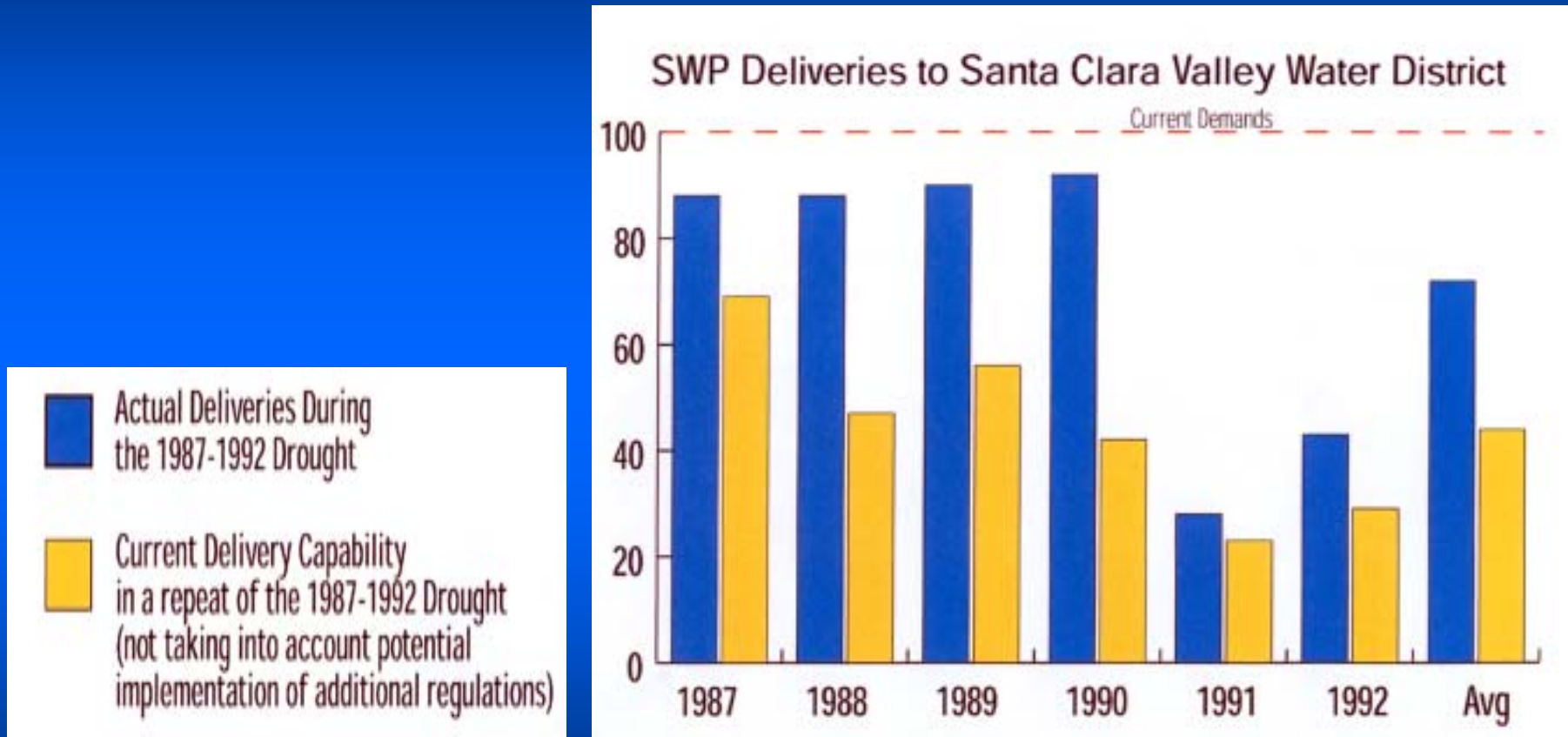
- **Napa Proposition (a.k.a. Delta Package): Potential increase in delta exports of 250 TAF-1 million AF.**
- **Erosion of baseline environmental protections (Miller-Bradley fish water dedication; Environmental Water Account)**
- **Other unmet environmental flow requirements (upstream; to Delta and San Francisco Bay)**
- **Is it sustainable to increase Delta exports at the expense of the environment?**

Napa Proposition Water Supply Benefits



SOURCE: CALFED Implementation: The Role of the Napa Proposal: Westlands Water District; Department of Water Resources; San Luis & Delta Mendota Water Authority; Metropolitan Water District of Southern California; Kern County Water Agency, September 2003

Next Drought: Risk of Shortage



Source: "De-Centralizing Water: A New Era for Local Water Agencies and the State of California", ACWA, March, 2004

Potential Implications for the Valley

- Delta water quality could be impaired.
- Improvements in Delta fisheries could be reversed.
- Imported supply could be uncertain, particularly in multiple dry years.

Water Sustainability in the Valley

(with reduced environmental costs)

- **Requires using/reusing water more efficiently (i.e., conservation) and identifying alternative sources.**
- **Need to diversify supplies, expand local initiatives, and develop reallocation strategies.**
- **Potential to avoid shortages through groundwater banking and market transfers.**

Conservation

- **SCVWD and BAWSCA (and 13 of their member agencies) are signatories of CUWCC MOU to implement conservation BMP's.**
- **SCVWD: Estimate that water conservation measures will reduce 2020 demand by over 52 TAF.**
- **BAWSCA: Population has increased by over 17% since 1986, but overall water use has only increased by 4%, and residential use increased by 9%.**

Source: BAWSCA Advancements in Water Conservation, 2003

Reallocation Strategies

- **Agriculture uses 75-80% of consumed water in California.**
- **Largest water projects have heavily subsidized agricultural water uses**
- **Central Valley Project's contracts are up for renewal: does Silicon Valley have an interest?**

Groundwater Banking

- **Semitropic Water Bank: Both SCVWD and members of BAWSCA have participated in this program.**
- **SCVWD's preferred strategy in its Integrated Water Management Plan: Water Banking in dry years of 100-350 TAF**

Market Transfers

- **SCVWD's preferred strategy in its Integrated Water Management Plan: Long-term transfers of up to 25 TAF/year for 10 years, 50TAF/year by 2020.**
- **BAWSCA supports dry year transfers between members.**
- **Potential: Exists for both SCVWD and BAWSCA (transfers could be increased with expanded interties to SWP supplies and to other Bay Area purveyors and an additional water treatment plant)**

Next Steps Toward Achieving Water Sustainability

- Continue and expand water recycling, conservation, and watershed protection programs.
- Pursue potential water transfers and policy reform opportunities.
- Secure institutional and financial support for banking, transfers and environmental restoration opportunities.
- Silicon Valley: Leader in high tech. One day the leader in water sustainability?